
XV. *Some Observations on the Common Bat of Pennant : with an Attempt to prove its Identity with the Pipistrelle of French Authors. By the Rev. Leonard Jenyns, M.A. F.L.S. Communicated by the Zoological Club of the Linnean Society.*

Read February 3, 1829.

IT has been usual with every systematic writer upon British zoology from the time of Pennant to the present day, to refer the Common Bat of this country to the *Vespertilio murinus* of Linnæus. Upon the correctness or incorrectness of this conclusion it were not, perhaps, at this period very easy to speak with certainty; since many of the descriptions of that author, from the paucity of species then known, are drawn up in such vague and general terms as to admit of application to several others besides the one originally alluded to. It is, however, somewhat remarkable that no one should ever have observed the striking disagreement between our English Bat and that to which the continental authors have continued to give the Linnean name, and the consequent impropriety of referring both these to the same species and making them synonymous. This difference resides not merely in the colour and general appearance of these two Bats, comparatively viewed,—in the shape of the auricle and its operculum, and in some of their relative dimensions,—but most palpably in their absolute size. In the detailed descriptions of the *Vespertilio murinus* given by Geoffroy and Desmarest, we find the average measurements of this species

to be nearly as follows :—Length of body three inches and a half ; head about one inch ; tail about two inches ; and the extent of wing fifteen inches and upwards. Whereas, in our Common English Bat, the length, measured from the nose to the insertion of the tail, is only one inch and seven lines ; that of the head six lines ; of the tail fourteen ; and the extent of wing rarely, if ever, exceeds eight inches and a half. It will surely be allowed that a discrepancy so great as this,—especially when viewed in connection with the other differences above alluded to, which are sufficiently obvious to all who investigate the matter to preclude the necessity of being more particularly pointed out,—is at once sufficient to establish the error of those naturalists who have considered these as belonging to the same species, and to warrant their separation in future.

Which of these two Bats has most claim to be considered as the true *Vespertilio murinus* of Linnæus, for the reason before given, it is difficult to decide. Nevertheless, if we may hazard a conjecture, I am inclined to think, from this circumstance of its larger dimensions, that the identity is greater in the case of the continental species than in ours. It is true, that Linnæus in his concise description says nothing direct about size ; but since he refers to the *Vespertilio major* of Brisson*, which that author asserts to be about a foot in extent of wing, it would seem that he intended a species of nearly similar dimensions. As, however, it is very possible that in that day as well as in the present, synonyms were frequently copied down without pre-

* In fact, these two authors refer to one another. Brisson quotes the *sixth* edition of the *Systema Naturæ*, and Linnæus in the *twelfth* edition quotes Brisson.—Brisson was the first to affix any specific name to this Bat, the edition of the *Systema Naturæ* first mentioned having appeared before trivial names were established ; and the term *major*, selected by him for this purpose, was afterwards changed by Linnæus in his later editions to that of *murinus*, in consequence of Brisson's observation "*murini coloris.*"

vious examination, I would not rest too strongly upon this point: nevertheless, I conceive that under any circumstances the Linnean name should be suffered to rest with the continental species, of which there are so many excellent figures and details by Daubenton*, Buffon†, Geoffroy‡, and Desmarest§, rather than with our own, of which there is not a single delineation or description by any British naturalist sufficiently accurate to admit of its being recognised.

Indeed, on this subject, it is surprising to remark the way in which authors have contented themselves with copying the bare and meagre descriptions of their predecessors, without adding anything from their own observation. Of all our English writers, including Martin, Berkenhout, Bewick, Shaw, Stewart, and Donovan, there is scarcely one who has done more than repeat the general colour and dimensions of this Bat, as originally stated by Pennant, or perhaps merely translate the Linnean specific character. And even in our two latest publications by Mr. Griffith and Dr. Fleming||, though (in the former at least)

* *Mém. de l'Acad. des Sciences de Paris*, ann. 1759. p. 378. pl. 1. f. 1.

† *Hist. Nat.* tom. 8. p. 126. pl. 15. f. 1.

‡ *Ann. du Mus.* tom. 8. p. 191. pl. 47 & 48.

§ *Mammal. (Encycl. Méthod.)* p. 134. pl. 33. f. 2.

|| In the *Animal Kingdom* of Mr. Griffith the description appears to be a translation from Desmarest, or at least evidently belongs to the *Vespertilio murinus* of that author; yet along with references to Buffon and other continental writers, are associated as synonyms the *Common Bat* of Pennant and the *Short-eared English Bat* of Edwards; thereby showing that these were considered to be the same as the species described, notwithstanding that Pennant's dimensions of this Bat are set at two inches and a half for the length of the body, and nine inches for the extent of wing, while Mr. Griffith has annexed to his own, a length equalling *four* inches, and an expanse of nearly *eighteen*!

Dr. Fleming in his *History of British Animals* has fallen into the same mistake. He has likewise taken for his specific character of our Common Bat that belonging to the *Vespertilio murinus* of Geoffroy and Desmarest, annexing the usual references to Ray and Pennant; under the idea that all these authors were describing the same species.

the description is somewhat more diffuse, there is still the error of confounding this species with the *Vespertilio murinus* of continental authors alluded to in the beginning of this paper.

It would seem, therefore, absolutely necessary to impose a new trivial name upon the Common Bat of this country and to treat it as nondescript, if there be really no further account of it than is to be found in the works of our British naturalists. But before taking such a step, it becomes necessary to inquire whether it may not be recognized among any other of the species described by foreign authors since the time of Linnæus, however distinct from that with which it has been always confounded. It does not seem likely that so common a species in this country should be peculiar to it, and not found on the continent, where all our other indigenous *Vespertilionidæ* are well known*; neither is it probable, that if it is to be met with in equal plenty abroad, it should have wholly escaped notice. Now on this point I am inclined to answer in the affirmative; and, though I give my opinion with much diffidence, I would ask, in what essential points our Common Bat differs from the *Pipistrelle* of Daubenton and succeeding writers. After a careful examination of very many specimens, and an accurate comparison of these with the descriptions annexed by Daubenton and Geoffroy to that species, I can see no material distinction between them. It is true that Daubenton's dimensions of the *Pipistrelle*, as well as those given by Desmarest in his *Mammalogie*, are somewhat less than in the generality of our English specimens: but such appear to have been taken from immature individuals; since the proportions between the several parts are still kept up, and the actual measurements agree in most particulars with those of one or two small specimens in my possession. Geoffroy,

* The *Vespertilio pygmaeus*, discovered by Dr. Leach in Devonshire, appears as yet to be an exception.

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however, makes this species larger ; and the dimensions which he has assigned for the length of the head and tail and for the expanse of wing are scarcely at all different from the results at which I have arrived. I may add also, that in the British Museum there is a specimen of the *Pipistrelle**, sent by Dr. Leach from the north coast of Scotland, which is even larger than that described by Geoffroy ; and with which I have compared more than once not only my own specimens of the Common Bat, but likewise those so named in the above Museum, after Pennant, without being able to detect any thing like a specific difference.

Rather, however, than dwell any further upon the identity of these species, or stop to point out every mark of similarity between them, I beg to subjoin a more accurate description of our Common Bat than is to be met with in any of our English authors ; after which persons will be the better enabled to form their own opinions on this subject.

VESPERTILIO PIPISTRELLUS. *Geoff.*

V. vellere fusco-rufescente, subtùs pallidiori ; auriculis ovato-triangularibus, extrorsùm emarginatis, capite brevioribus ; trago surrecto apice obtuso ; caudâ antibrachium longitudine æquantì, è membranâ interfemorali paululùm exsertâ.

Le Pipistrelle. *Daub. Mém. de l'Acad. des Scien.* 1759. p. 381. pl. 1. f. 3. *Buff. Hist. Nat.* tom. 8. p. 129. pl. 19. f. 1.

Vespertilio Pipistrellus. *Geoff. Ann. Mus. d'Hist. Nat.* tom. 8. p. 195. pl. 47. & 48. *Desmar. Mammal. (Encycl. Méthod.)* p. 139. pl. 33. f. 5. *Griff. Anim. King. (Synop.)* p. 80. sp. 251.

* Mr. Gray of the British Museum, informed me that he believed this specimen was named by Kuhl, which, if so, is strong testimony in favour of its being the same with the *Pipistrelle* on the continent, notwithstanding its superior size.

Dimensions.

Dimensions.

	Inches.	Lines.
Length of the body, measured from the nose		
to the root of the tail	1	7
——— of the head	0	6
——— of the tail	1	2
——— of the auricle	0	4
Breadth of the auricle at the broadest part	0	3
Length of the tragus	0	2
Breadth of the tragus	0	$0\frac{3}{4}$
Length of the arm	0	$8\frac{1}{2}$
——— of the forearm	1	2
——— of the thumb	0	$1\frac{3}{4}$
——— of the thigh	0	5
——— of the shank	0	5
Distance measured from the carpus to the		
apex of the second finger	2	0
——— measured from the carpus to the		
apex of the fourth finger	1	6
Expansion of the flying membrane	8	4
Exsertion of the tail beyond the interfemoral		
membrane	0	$0\frac{1}{2}$

Strongly resembling the *Noctule* in its general characters, but at once distinguished from that species by its inferior size, weighing only eighty-two grains. Head much depressed in front, convex behind, with the upper part of the occiput remarkably protuberant*: no occipital crest. Muzzle extending three lines beyond the ears, in young specimens rather elongated, which appearance wears off afterwards,

* I have compared the skull with Geoffroy's figure of that of the *Pipistrelle*, which it resembles in all essential particulars.

from

from the enlargement of the head and the filling up of the sides of the face, when the profile is somewhat altered. Nose obtuse at the extremity, and slightly emarginate between the nostrils; these last reniform, with tumid edges: on each side of the nose, immediately above the upper lip, is a protuberant swelling, formed by a congeries of sebaceous glands, which, when cut through, are of a yellowish-white colour. Eyes round and very small, situate half-way between the above glands and the ears, and sunk deep in the head; over each, immediately above the anterior angle, is a small elevated wart furnished with a few black hairs: a transverse tuft of rather long upright hair on the forehead, which has the effect of making the head appear more elevated than it really is: rest of the face, including the cheeks, contour of the eyes, and space above the nose, almost naked, particularly in young specimens. Auricle broad, rather more than half as long as the head, oval, approaching to triangular, deeply notched on its external margin about midway down; tragus half the length of the auricle, oblong, and terminating in a rounded head, nearly straight or slightly bending inwards. In the upper jaw four incisors, on each side two, of which the first is longest; in the lower jaw six, each of which has three lobes; grinders five on either side, above and below; the first in the upper and the two first in the lower jaw with only one point; of these last-mentioned teeth, the second is longer than the first; the other grinders in the lower jaw have each five points, three on the inner and two on the outer margin, which last are alternately long and short. Fur rather long and silky, yellowish red on the forehead and at the base of the ears, on the rest of the upper parts reddish brown, with the lower half of each hair dusky; on the under parts the

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the hair is wholly dusky, except at the extreme tips, which are of the same colour as above, but paler. In young specimens the fur is entirely of a dusky-brown or brownish-gray, in some instances almost black, without any tinge of red, which appears to come afterwards, and to increase in intensity with the age and size of the individual*. Nose, lips, ears, flying and interfemoral membranes, dusky.

To the above description of our Common English Bat, which has been drawn from an examination of many individuals of different sizes compared together†, I may, perhaps, be allowed to add two or three remarks in illustration of its habits. Pennant, and after him some other of our English authors, describe this species as retiring at the approach of winter into caves, ruined buildings, the roofs of houses, or hollow trees. This is by far too general an assertion. I believe that each of our British Bats has its own peculiar place of concealment, and that, under ordinary circumstances, their respective habits in this particular are always the same. As far as my own experience goes, I have found hollow trees the constant retreat of the *Noctule*, and the roofs of houses as uniformly resorted to by the Long-eared Bat; whilst the species under consideration I never met with but in the crevices of decayed brick-work, in the cracks of old gateways and door-frames, or behind the leaden pipes frequently attached to buildings for carrying off the rain. They seem peculiarly to delight in the two former situations,

* In the specimen of the *Pipistrelle* in the British Museum, the fur is of a remarkably red or foxy colour; and this individual is likewise distinguished by its size.

† The dimensions are all taken from the same individual, recently killed, and whilst all the parts were in their natural state. The expansion of the flying membrane varies in different specimens from seven inches and a half to eight inches and a half, which last measurement I never found it to exceed; so that Pennant's statement of *nine inches* for this part must be looked upon as considerably above the average.

collecting,

collecting, sometimes in prodigious quantities, wherever from the falling out of the mortar they are enabled to insinuate their bodies, and flocking thither, as well for the purpose of concealment during the day-time in the summer months, as for that of undergoing those more profound slumbers which are occasionally superinduced by the severities of winter.

Again: It is a common remark, that the brumal torpidity of the Bat is liable to be broken through by a sudden increase of temperature, and that these animals appear abroad at *all* seasons of the year, if the thermometer be above 44° : but as far as my observation goes, this takes place much more frequently at the commencement of winter than towards its conclusion; and it would seem to me, that though it requires a very reduced temperature,—probably one inch below freezing point,—to throw them into a state of complete torpidity, yet that when this has fairly taken place, one, much higher than would have proved sufficient to have put them on wing before its commencement, is necessary to awaken them from their slumbers. Accordingly, we find the Bat showing itself every evening throughout the months of November and December, if the weather be mild and open, and I have even noticed it flying with its usual activity when the thermometer has been down at 38° ; and this will often continue to be the case till the setting-in of those severe frosts which usually occur soon after the commencement of the new year: but after the force of the winter has begun to abate, I have in vain looked for the Bat on wing till the beginning or near the middle of March, notwithstanding the temperature has often risen considerably above 50° of Fahrenheit

It is also worthy of note, that the whole of the above observation applies only to the species under consideration. The *Noctule* and the Long-eared Bat show themselves for a longer or shorter period during the summer months, according to circum-

stances ; but these, after having once withdrawn, are not generally seen again till the ensuing season*. Most probably their continuance abroad is regulated by the supply of food, which itself must depend in some measure upon the state of the weather : and from the circumstance of our common Bat being so much on wing in the dead season of the year, it seems likely that the prey of this species may consist chiefly of gnats and small *Tipulidæ*, which do not appear to be affected like other insects by the cold of winter.

I have only to add in conclusion, that if I am right in my remarks upon the identity of our Common Bat with the *Pipistrelle* of French authors, the true *Vespertilio murinus* must necessarily be suppressed as a British species, at least till further observation shall have detected it in this country.

* The early retreat of the *Noctule* was particularly noticed by White, who in his *Natural History of Selborne* (p. 76.) hints at the possibility of its migration. The same idea seems to be entertained by Dr. Fleming (*Phil. Zool.* ii. 29.); but as I have had this species brought to me from the hollows of trees late in the autumn, and in a very reduced state, I cannot assent to this myself. Pennant also (*Hist. Quad.* ii. 317.) mentions one that was taken during winter in Flintshire. Moreover, it may be added, that the Bat, though capable of supporting itself in the air for a considerable time by means of its flying membranes, seems on the whole but ill calculated for performing those extensive journeys which migration supposes.